

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

San Diego Gas & Electric Company	Docket No. EL00-95-000
Investigation of Practices of the California Independent System Operator and the California Power Exchange	Docket No. EL00-98-000
Public Meeting in San Diego, California	Docket No. EL00-107-000
California Power Exchange Corporation	Docket No. ER00-3461-000
California Independent System Operator	Docket No. ER00-3673-000

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**PREPARED DIRECT TESTIMONY OF  
MICHAEL H. SCHEIBLE**

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Dated: November 21, 2000

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**PREPARED DIRECT TESTIMONY OF  
MICHAEL H. SCHEIBLE**

1 Q. Please state your name and business address.

2 A. My name is Michael H. Scheible. My business address is 2020 L Street,  
3 Sacramento, California, 95814.

4

5 Q. By whom are you employed and in what capacity?

6 A. I am employed by the California Air Resources Board as the Deputy Executive  
7 Officer.

8

9 Q. Please describe your professional qualifications.

10 A. I have worked for the Air Resources Board (ARB) for 27 years in a wide variety of  
11 positions. Currently my responsibilities include supervision of the ARB staff  
12 responsible for energy issues including electricity. I worked extensively as the  
13 ARB's lead person on the development of the RECLAIM program. I have a

1 Bachelor of Science degree in Chemical Engineering, and a Master of Science degree  
2 in Air Pollution Control Engineering.

3  
4 Q. Have you previously filed testimony with the FERC?

5 A. No.

6  
7 Q. What is the purpose of your testimony in this proceeding?

8 The purpose of my testimony is to address the extent to which the costs of  
9 RECLAIM Trading Credits (RTCs) impacted electricity generation costs and  
10 electricity prices this year.

11  
12 Q. What is RECLAIM and what occurred in 2000?

13 A. The RECLAIM program is an emissions allocation and trading program which has  
14 been in effect in the South Coast Air Quality Management District (SCAQMD) since  
15 1994. Stationary sources that emit four tons a year or more of oxides of nitrogen  
16 (NOx) must participate in the program. Each source has been issued an allocation of  
17 emissions (called RECLAIM Trading Credits or RTCs) for each year of operation.  
18 Allocations started at higher than historic emission levels in 1994, but decrease  
19 annually each year through 2003, after which they continue at a constant level. RTCs  
20 must be used for the year they are issued. If not used, they expire.

21  
22 All of the medium and larger sized fossil fuel fired power plants in the District are in  
23 the RECLAIM program, as are several hundred other industrial facilities. A  
24 RECLAIM source may choose to install emission control equipment that enables it to  
25 operate within its allocation, or may exceed its emissions allocation, so long as it  
26 acquires sufficient RTCs from other sources. Likewise, a source that emits at lower  
27 levels than its allocation may sell the excess at whatever price the market will bear.

28  
29 Between 1994 and 1999 the market price of RTCs remained low. RTCs could be  
30 obtained for much less than \$1.00 per pound. This situation existed because in

1 RECLAIM's early years many sources were allocated far more RTCs than they  
2 needed to use, and there was a excess of RTCs available to the sources which  
3 exceeded their allocations. As a result, there was little incentive for most sources to  
4 install emission controls, because the cost of RTCs was much less than even  
5 relatively inexpensive control equipment. This was especially true of the power  
6 plants. Most of these units had relatively high allocations, and many had uncertain  
7 futures in terms of their economic viability.

8  
9 However, in 2000 the situation with RTCs changed dramatically for two reasons.  
10 First, 2000 was the year when the declining RTC allocation finally caught up to  
11 actual emission levels. It had been anticipated that industries would foresee this  
12 occurrence, and would reduce emissions by investing in control, rather than by  
13 buying RTCs from others. Now it appears that the expectation that the cheap market  
14 prices of RTCs prior to 2000 would continue and may have led to many sources  
15 delaying expenditures for control equipment.

16  
17 Second, the large increase in the prices paid for electricity in 2000 and the need to run  
18 most existing generating units extensively to meet demand resulted in many of these  
19 units increasing hours of operation and emissions far above historic levels and also  
20 above their year 2000 allocation of RTCs. Thus the market for RTCs quickly  
21 changed from one dominated by low prices and sellers, to one where demand far  
22 exceeded supply. Because it takes time to install emission controls, and because  
23 shortfalls cannot be made up in future years because RTCs have a specified 12 month  
24 life, this imbalance could not be quickly addressed. As a result, the average price  
25 paid for a NOx RTC went from \$1 a pound in January 2000, to \$4 in June 2000 to  
26 \$20 in October 2000.

27  
28 Q. What impact did RECLAIM have on power prices in 2000?

29 A. As with many other aspects of this year's electricity prices, it is very difficult to  
30 clearly isolate the price impact of one factor from the many factors that have led to

1 this year's market, where the cost of generating power bears little relationship to the  
2 price that it commands. However, the FERC's analysis that is the basis for the  
3 conclusion that RECLAIM may have led to an increase in the base cost of power of  
4 up to \$80 per Megawatt hour, does not pass muster. Similarly, conclusions that  
5 RECLAIM added a significant amount to California's overall electricity costs in 2000  
6 are not supportable. The evidence that these conclusions are not correct is presented  
7 below.

8  
9 First, many of the RTCs used by power facilities in the SCAQMD were not paid for  
10 by the owners through any market transaction. These RTCs were part of the source's  
11 initial allocation for the year 2000, and cost nothing to use (unless one concludes that  
12 the power generator could make more money by foregoing operation and selling its  
13 RTCs).

14  
15 Second, RECLAIM affects only thermal power generating units in the SCAQMD.  
16 These units account for about 20 percent of the power generating capacity in the  
17 State, and RTC market costs affect only those units that have exhausted their  
18 allocations for the year. Thus, the market price of RTCs was a factor for only a  
19 relatively small percentage of the State's generation capacity in 2000. (It appears that  
20 even units that had exhausted their allocations continued to operate and provide  
21 power this year. Presumably they did so because they believed the price they were  
22 receiving for power was sufficient to cover any RTC acquisition or penalty costs they  
23 could face in the future.)

24  
25 Third, much of the RTC price increase occurred after June, well after electricity  
26 prices had skyrocketed. In the case of a power generator that had exhausted its  
27 allocated RTCs and which decided to reflect RTC cost into its bid behavior, a more  
28 reasonable estimate of the cost impact in the May through July time frame should be  
29 based on an average RTC cost of about \$4.00 per pound. Thus, RTC costs would  
30 have been on the order of \$1.00 per Megawatt hour for a large cleaner unit that

1 emitted at 0.25 pounds per Megawatt hour and about \$10.00 per Megawatt hour for a  
2 mid-sized poorly controlled unit that emitted at 2.5 pounds per Megawatt hour. Since  
3 peak prices were seen in the time frame well before RTCs became expensive, it is  
4 difficult to conclude that RECLAIM was a primary factor in pushing prices to the  
5 high level seen this summer.

6  
7 Finally, and most conclusive of all, a review of the actual sales of RTCs does not  
8 support either the FERC conclusion or assertions the RECLAIM has had major cost  
9 impacts, relative to the total amount paid for electricity in 2000. The SCAQMD  
10 records all RTC sales. From January 2000 through July 2000 the total amount paid  
11 by all buyers (including non-power generators) of RTCs was about \$5 million with  
12 about 2 million pounds of NOx traded at an average price of about \$3 per pound. In  
13 the August through October period, RTC sales increased sharply, both in volume and  
14 price, and totaled approximately \$70 million with about 4 million pounds of NOx  
15 traded at an average price of about \$17 per pound. Although a considerable amount  
16 of money was exchanged for RTCs in 2000, it is small relative to California's price  
17 tag for electricity purchases. For example, in the August to September time period,  
18 after RECLAIM RTC prices had spiked, trades totaled about \$38 million while total  
19 electricity costs were approximately \$7 billion. Clearly, actual RTC costs, at about  
20 one-half of one percent of electricity costs, were only a small factor in overall  
21 electricity prices.

22  
23 Q. What is the future expected impact of RECLAIM?

24 A. The SCAQMD has reviewed the performance of RECLAIM in 2000, and has  
25 concluded that the very high prices for NOx RTC will not persist for an extended  
26 period. Air Resources Board staff have reviewed this analysis, and agree that prices  
27 should drop by a large amount over the next 12 to 24 months. The SCAQMD  
28 studied the cost and availability of NOx control technology for RECLAIM sources.  
29 The district found that readily available technologies exist to reduce NOx emissions  
30 to below the 2003 RECLAIM allocations at an average cost of under \$2.00 per

1        pound. Due to the current high price of NOx RTCs, many sources (especially power  
2        generators) are expected to deploy this technology instead of buying much more  
3        expensive and uncertain RTCs. Many sources, including most of the region's higher  
4        emitting power plants, can be retrofitted with controls fairly quickly, and RECLAIM  
5        RTC prices are expected to decline rapidly thereafter.

6

7        Q. Does this conclude your testimony?

8        A. Yes.

1

2

**VERIFICATION PURSUANT TO RULE 2005**

3

4 I, Michael H. Scheible, declare, on oath, that I caused the foregoing testimony to be  
5 prepared; that the answers appearing therein are true to the best of my knowledge and  
6 belief; and that if asked the questions appearing therein, my answers would, under oath,  
7 be the same.

8

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10

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Michael H. Scheible

11



## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document entitled **“PREPARED DIRECT TESTIMONY OF MICHAEL H. SCHEIBLE”** upon all known parties of record in this proceeding by mailing by first-class mail a copy thereof properly addressed to each party.

Dated at San Francisco, California, this \_\_\_\_<sup>th</sup> day of November, 2000.

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Margarita Lezcano